Tide: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN A MULTIMEDIA SIGNAL

IN THE CLAIMS

The following listing of the claims will replace all prior listings of claims in the application. Inserted text is underlined, and deleted text is either struck through or shown in double enclosing brackets. Applicants aver that no new matter has been added and that all claimed elements are supported by Applicants' specification as originally filed.

- (Currently Amended) A method of relating one or more trigger actions with a multimedia signal, the method comprising:
 - providing at least one a trigger time point (T_n; T_{n+1}) of a plurality of trigger time points within a multimedia signal, the trigger time point (Tn; Tn+1) corresponding to a segment of a plurality of segments of the multimedia signal; and for each trigger time point (Te; Text)
 - providing at least one a representation of least one an associated trigger action that corresponds to the trigger time point $(T_n; T_{n+1})$, where [[each]] the trigger time point (Tn; Tn+1) indicates a time point [[of the]] within the multimedia signal [[for]] at which the at least one associated trigger action is to be available triggered during a playback of the multimedia signal.
 - for each given trigger time point (T_n: T_{n+1}) deriving a fingerprint based on the basis of a segment of the multimedia signal, where the segment of the multimedia signal is associated with the given trigger time point (Ta: Taux), and
 - associating the derived fingerprint with the at least one associated trigger action.
- (Currently Amended) The method according to claim 1, further comprising: for each obtained trigger time point (Tn; Tn+1), storing at least one of the derived fingerprint [[and]] or the at least one representation of the at least one associated trigger action in a first database.

Filing Date: January 10, 2006

Title: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN A MILTIMEDIA SIGNAL

3. (Currently Amended) The method according to claim 1, wherein the one or more derived fingerprints and/or the at-least one representation of at-least one associated trigger-action for the multimedia signal is transmitted to a playback-device via the Internet or in a side-channel of a broadcast channel or via some other channel or means, further comprising

transmitting at least one of the derived fingerprint or the representation of the action to a playback device.

4. (Currently Amended) The method according to claim 1, wherein the segment of the multimedia signal is associated with the given trigger time point (T_n: T_{n+1}) according to: the segment of the multimedia signal starting or ending at a predetermined distance before or after the given trigger time point (T_n: T_{n+1}), or the given trigger time point (T_n: T_{n+1}) being at a predetermined time point between a start

and an end of the segment of the multimedia signal.

- the trigger time point (T_a; T_{a+1}) corresponds to at least one of a start of the segment, an end of the segment, a predetermined distance from the start of the segment, or a predetermined distance from the end of the segment.
- 5. (Withdrawn) A method of detecting one or more trigger actions in a multimedia signal (101), the method comprising the steps of:
 - generating a fingerprint stream (104) on the basis of the multimedia signal (101),
 - comparing a segment of the fingerprint stream (104) with one or more fingerprints (102) stored in a second database (203 ') in order to determine if a match exists or not between the segment and a fingerprint (102) in the second database (203 '), the second database (203') further comprising for each stored fingerprint (102) at least one representation of at least one associated action (105), and
 - if a match exists retrieving the at least one representation of the at least one associated action (105) associated with the matching fingerprint (102).

Page 4

Serial Number: 10/564,297 Filing Date: January 10, 2006

ring date sangary 10, 2007.
Tile: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN

A MULTIMEDIA SIGNAL

6. (Withdrawn) A method according to claim 5, characterized in that said method further comprises the step of: executing the at least one associated action (105) associated with the matching fingerprint (102) at an appropriate trigger time point (T_n: T_{n+1}).

- (Withdrawn) A method according to claim 6, characterized in that the appropriate trigger time point (Tn; Tn+1) is given by an unambiguously relation with a segment of a multimedia signal (101) used during generation of the matching fingerprint (102).
- 8. (Currently Amended) The method according to claim 1, wherein [[said]] the multimedia signal is at least one of an audio signal[[,]] or a video signal or a combined audio/video signal.
- 9. (Currently Amended) The method according to claim I, wherein [[said]] the at-least-one associated trigger action is selected from [[the]] a group consisting of:

retrieving and displaying additional information on a display, retrieving and playing additional information via a speaker,

playing another multimedia signal instead of [[said]] the multimedia signal for a

predetermined or variable period of time.

interrupting the playback stopping or pausing playing of [[said]] the multimedia signal, executing [[other]] control commands, and preparing [[the]] a system for user inputs.

10. (Currently Amended) The method according to claim 2, wherein <u>further comprising</u> storing at least one of the derived fingerprint or the representation of the action and/or the fingerprint is-stored in a second database; and <u>wherein the derived fingerprint</u> is at least one of an audio fingerprint or a [[and/or]] video fingerprint.

Filing Date: January 10, 2006

Title: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN A MILTIMEDIA SIGNAL

A MULTIMEDIA SIGNAL

11. (Currently Amended) A multimedia device-for-relating one-or-more trigger-actions with a multimedia signal, the device comprising:

- a microprocessor-controlled fingerprint module configured to provide means for providing at least-one a trigger time point $(T_n; T_{n+1})$ of a plurality of trigger time points within a multimedia signal, the trigger time point $(T_n; T_{n+1})$ corresponding to a segment of a plurality of segments of the multimedia signal, and for each trigger-time point $(T_n; T_{n+1})$ providing at least-one a representation of least-one an associated trigger action that corresponds to the trigger time point $(T_n; T_{n+1})$, where [[each]] the trigger time point $(T_n; T_{n+1})$ indicates a time point [[of the]] within the multimedia signal [[for]] at which the at-least-one-associated-trigger action is to be available triggered during a playback of the multimedia signal,
- the microprocessor-controlled fingerprint module a fingerprint generator adapted to, for each given trigger time point (T_n; T_{n+1}), deriving being further configured to derive a fingerprint based on the basis of a segment of the multimedia signal, where the segment of the multimedia signal is associated with the given trigger time point (T_n; T_{n+1}); and
- a microprocessor-controlled database module configured to associate means for

 associating the derived fingerprint with the at least one associated trigger action.
- 12. (Currently Amended) The device according to claim 11, further comprising: a first database having-stored to store at least one of the derived fingerprint [[and]] or the at-least-one representation of the at-least-one-associated trigger action for-each obtained trigger-time point (T_n: T_{n+1}).
- 13. (Currently Amended) The device according to claim 11, further comprising: a transmitter for transmitting to transmit at least one of the one-or-more derived fingerprint or the fingerprints and/or the at-least-one representation of at-least-one the associated trigger action for the multimedia signal to a playback-device via the Internet or in a side-channel of a broadcast-channel or via some-other-channel or means.

Tide: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN A MULTIMEDIA SIGNAL

(Currently Amended) The device according to claim 11, wherein the segment of the multimedia signal is associated with the given trigger time point (Ta; Ta+1) according to:

- the segment of the multimedia signal starting or ending at a predetermined distance before or after the given trigger time point (Ta: Tall), or
- the given trigger time point (Tn; Tn++) being at a predetermined time point between a start and an end of the segment of the multimedia signal.
- the trigger time point (Tn; Tn+1) corresponds to at least one of a start of the segment, an end of the segment, a predetermined distance from the start of the segment, or a predetermined distance from the end of the segment.
- 15. (Withdrawn) A audio and/or video playback device (300) for detecting one or more trigger actions in a multimedia signal (101) comprising:
 - means (302) for generating a fingerprint stream (104) on the basis of the multimedia signal (101),
 - means (302) for comparing a segment of the fingerprint stream (104) with one or more fingerprints (102) stored in a second database (203') in order to determine if a match exists or not between the segment and a fingerprint (102) in the second database (203'), the second database (203') further comprising for each stored fingerprint (102) at least one representation of at least one associated action (105), and
 - means (302) for, if a match exists, retrieving the at least one representation of the at least one associated action (105) associated with the matching fingerprint (102).
- 16. (Withdrawn) A evice according to claim 15, characterized in that said device further comprises; means (303) for executing the at least one associated action (105) associated with the matching fingerprint (102) at an appropriate trigger time point $(T_n; T_{n+1})$.

Serial Number: 10/564,297 Filing Date: January 10, 2006

ring date sangary 10, 2007.
Tile: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN

A MULTIMEDIA SIGNAL

17. (Withdrawn) A device according to claim 16, characterized in that the appropriate trigger time point (T_n; T_{n+1}) is given by an unambiguously relation with a segment of a multimedia signal (101) used during generation of the matching fingerprint (102).

- 18. (Currently Amended) The device according to claim 11, wherein [[said]] the multimedia signal is at least one of an audio signal[[,]] or a video signal or a combined audio/video signal.
- 19. (Currently Amended) The device according to claim 11, wherein [[said]] the at least one associated trigger action is selected from [[the]] a group consisting of:

retrieving and displaying additional information on a display, retrieving and playing additional information via a speaker,

playing another multimedia signal instead of [[said]] the multimedia signal for a predetermined or variable period of time,

interrupting the playback stopping or pausing playing of [[said]] the multimedia signal, executing [[other]] control commands, and preparing the system device for user inputs.

- 20. (Currently Amended) The device according to claim 12, <u>further comprising wherein the</u> derived fingerprint and/or the fingerprint is stored in a second database to store at least one of the <u>derived fingerprint</u> or the representation of the action; and <u>wherein the derived fingerprint</u> is at <u>least one of</u> an audio <u>fingerprint</u> or a [[and/or]] video fingerprint.
- 21. (Currently Amended) A <u>non-transitory</u> computer readable storage medium having stored thereon instructions for causing one or more processing units <u>processors</u> to execute the method according to claim 1.